TECHNICAL NOTES

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Harvesting Chemical Wood and Pulpwood more than Doubles Usual Yields from Improvement Cutting in Second-Growth Northern Hardwoods

Over twice the usual yield of merchantable products was realized from a recent 20-acre improvement cutting on the Argonne Experimental Forest, Nicolet National Forest, Wisconsin. This increase was the result of utilizing hardwood chemical wood (1.6 cords per acre) and hardwood pulpwood (4.9 cords per acre).

The volume of these products was in addition to 600 board-feet of yellow birch, sugar maple, and miscellaneous hardwood sawlogs plus 1½ cords of balsam fir and hemlock pulpwood per acre.

Table 1.--Trees harvested and volume utilized by product (per acre)

Primary product[1/]	Trees cut	Basal area cut	Volume Harvested[2/]
	Number	Square feet	Cubic feet
Standard operation:			
Hardwood sawlogs	14	17.5	164
Conifer pulp	16	11.0	128
Total	30	28.5	292
Additional products:			
Hardwood pulp	47	9.7	[3/]243
Hardwood chemical wood	16	1.4	[3/] 77
Total	63	11.1	[3/]320
All products	93	39.6	612
Percent increase	210	39	109

1/ Trees sorted by product utilized from butt log or bolt. Based on inventory data from eight 1/5-acre plots.

2/ Based on analysis of kiln pile samples and national forest scale of hardwood logs and softwood pulp.

3/ Includes material from tops and limbs of sawlog trees.

(Over)

Most of the hardwood pulpwood and chemical wood was taken from tops and limbs of sawlog trees and from trees below sawlog size. Bolts down to 4 inches d.i.b. (diameter inside bark) were taken for pulpwood while bolts down to 2 inches d.i.b., along with larger bolts too crooked or defective for pulpwood, were taken for chemical wood.

Before logging, the stand was typical of second-growth northern hardwoods with numerous poles and saplings, plus a scattering of sawlog-sized older trees remaining from previous logging operations. Because a range of products was salable, it was possible to reduce the basal area 35 percent while removing largely the poor quality trees 4 to 24 inches in diameter within the stand. Prospects for growth of the better quality trees remaining were greatly improved thereby.

A ready market for chemical wood (the operator received $10 per cord over and above stumpage value) at an experimental charcoal kiln about a half-mile away made the job a financial success. This is not the normal market situation in the area. However, the prospective increase in the hardwood pulpwood market in Wisconsin and the potential development of small charcoal kilns in close conjunction with logging operations promise an opportunity to step up needed quality and quantity growth of our northern hardwood forest in the near future.

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